

WATER CONSERVATION NEWS

Department of Water Resources Division of Planning & Local Assistance Water Conservation Office

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Rice Growers Use Lasers, Manage Soils to Cut Water 38 percent

Nearly half a million acres of land north of the Sacramento/San Joaquin Delta are planted to rice every year, creating an image of a sea of flooded fields and wasted water. But much of this is an illusion, according to California Rice Industry Association Executive Director John Roberts.

Roberts cites Water Education Foundation* statistics indicating that the rice industry has reduced applied water use 38 percent since 1962, from an average of 8.9 acre-feet/acre to 5.5 acre-feet/acre. To put this into perspective, it takes 25 gallons of water to produce a serving of rice, 40 gallons for a serving of cantaloupe, 330 gallons for a chicken entree, and 1,231 gallons for a cut of beef.

Farmers invest \$40 per acre every two to three years to precision grade their fields using laser beams as benchmarks. Ricelands are scraped and filled to maintain a consistent, shallow depth of water across the field. Lasered fields impound water more efficiently and reduce the need for herbicides, because four to six inches of water suppresses

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*The mission of the Water Education Foundation, an impartial non-profit organization, is to develop and implement education programs leading to a broader understanding of water issues and to resolution of water problems.

CIMIS

The CIMIS ET index can be used to assist in adjusting lawn watering. Refer to "CIMIS Network News" on page 16 for more information.

CALFED Negotiations Continue

California Urban Water Agencies and the Environmental Water Caucus have been negotiating a proposal for CALFED's water use efficiency common program during the past 18 months. Since many California water suppliers were not aware that such a proposal was being drafted, Kern County Water Agency and Bear Valley Community Services District, along with other non-CUWA water suppliers, felt that information about the proposal should be more widely distributed. KCWA and Bear Valley Community Services District held information meetings to foster discussion about the proposal; DWR hosted two of these meetings.

At the time of the meetings, the CUWA/EWC proposal contained recommendations to CALFED for a process that urban water suppliers would follow to attain certification for implementing the Best

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Water Conservation News provides information on the latest developments in agricultural and urban water conservation programs. This is a free newsletter published quarterly by the California Department of Water Resources, Division of Planning and Local Assistance, Water Conservation Office.

For more information about DWR's water conservation programs, call Ed Craddock, Chief, Water Conservation Office, at (916) 327-1655; Greg Smith, Urban Water Conservation, at (916) 327-1619; or Baryohay Davidoff, Agricultural Water Conservation, at (916) 327-1788. Information is also available from any of the following DWR District staff:

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DWR does not endorse any of the businesses or consulting firms mentioned in this newsletter, since there may be others that offer the same or similar services.

CALFED Negotiations Continue

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Management Practices. The informational meetings gathered comments from water suppliers about the CUWA/EWC proposal. In addition, comments were received by mail, fax, and telephone. All of these comments and concerns were then combined with the CUWA/EWC document to show areas of agreement and where differences exist. A separate proposal was subsequently generated. No single proposal has yet been

finalized for submission to CALFED as part of the water use efficiency common program, and negotiations between CUWA and EWC, and among other water suppliers statewide are continuing. For more information about the CUWA/EWC proposal, contact Byron Buck at CUWA at (916) 552-2929. For more information about the statewide water supplier proposal, contact Mary Lou Cotton, KCWA at (805) 634-1405.

WCIC MEETING

Mark your calendars for the fourth meeting of the Water Conservation Information Committee to be held August 27-28, 1998, at the Mission Valley Marriot in San Diego, California. First-day events include a water conservation-related tour of the San Diego Zoo followed by a no-host reception at the hotel. The meeting is scheduled for 9 a.m. to 4 p.m. on the second day and will focus on the Cost-Effectiveness Analysis of urban Best Management Practices and the Net Benefit Analysis of agricultural Efficient Water Management Practices. The WCIC meeting is jointly sponsored by USBR and DWR and will be hosted by the Lower Colorado Region of USBR. For further information, contact Meena Westford, USBR, at (909) 695-5310.



Mission Statement of the Water Conservation Office

"To advance the efficient management and use of California's water resources in cooperation with other government agencies and the private sector through technical and financial assistance"



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on recycled paper.

Editorial

By Ed Craddock



How Water Efficient is *Your* Household? (Revisited)

In our last edition of *Water Conservation News*, I described my family's interior residential water use and how we planned to lower it. By the time you read this article in July, I will have replaced my older water conserving 3.5-gallon toilets with 1.6-gallon models, and will have installed a horizontal axis washer to complete my household retrofit. I'll let you know the results of these retrofits from my EDWATER* spreadsheet later on—but now it's time for the rest of the story.

Reducing exterior water use is another continuing saga. Soon after we purchased our new home in 1992 the five-year drought ended. However, as a result of the drought the entire front yard was irrigated with gear driven rotors and drip irrigation. There was a substantial amount of turf in front, lots of low-water-using plants, and six trees. The backyard was not landscaped, but had been plumbed for three more stations on the six-station automatic controller. We decided that we would not plant turf in back and opted for a Mediterranean courtyard and garden instead. We hired a landscape designer, but did all the grading, landscaping, and micro-irrigation installing ourselves.

The good news is that my EDWATER program indicates that we are applying the same amount of water after the backyard landscaping was installed that we initially used to irrigate only the frontyard. Our home and lot size are larger than the average for the community, but our goal is to reduce our applied water to 0.6 of reference evapotranspiration (Eto). I'm confident we can achieve 0.6 Eto because of a landscape water audit completed late last summer. The audit indicated that minor changes to my irrigation system and management of the turf irrigation could reduce my applied water by 20 percent in the frontyard. However, the same audit indicated I was under-irrigating my three Chinese Pistache trees in the back. I will also need to analyze some data from similar residences in the area to see how effectively we are irrigating. (Tune in later for the results at the end of the year.)

One parting thought about landscape conservation. It is a measure that cannot be installed and forgotten, but instead requires constant observation and operational costs. My biggest mistake was not buying the highest quality automatic controller, solenoid valves, etc. Precise irrigation scheduling and leaks are my remaining problems.

Remember to e-mail me at craddock@water.ca.gov with your experiences with conservation measures. We'd like to highlight these experiences as newsbriefs in future issues of *Water Conservation News* (see page 8).

*EDWATER is the Excel spreadsheet I've used to track my household water use for the past six years.



The Agricultural Water Management Council

The Agricultural Water Suppliers Efficient Water Management Act (AB 3616) became law in September 1990. The legislation directed the Department of Water Resources to establish an advisory committee composed of agricultural water suppliers, farmers, the academic community, environmental groups, and other interested parties. Their task was to review and evaluate potential efficient water management practices and to determine which were feasible to achieve water conservation. DWR was also directed to assist in the implementation of EWMPs.

An outgrowth of AB 3616 was the development of a Memorandum of Understanding (MOU) as requested by Governor Wilson. The Agricultural Water Management Council was formed under the MOU to provide signatories to the

MOU with the opportunity to review, provide comments, and endorse EWMPs. Every signatory to the MOU is a member of the Council that must implement generally applicable EWMPs including the development of a water management plan. The Council currently has three groups of members representing over 70 signatories, two of which comprise the Council's voting membership. Group 1 includes agricultural water suppliers, while group 2 includes environmental interest groups. Group 3 (non-voting members) includes all other interested parties.

The purposes of the MOU are to: (1) create a constructive working relationship between agricultural water suppliers, environmental interest groups, and other interested parties; (2) establish a dynamic list of EWMPs;

(3) establish criteria to evaluate the appropriateness of EWMPs; and (4) implement appropriate EWMPs, while avoiding unnecessary or unreasonable planning, paperwork, or expense for water suppliers, thereby voluntarily achieving more efficient water management than currently exists or may be required by existing law.

Each water supplier who has signed the MOU is committed to developing a water management plan based on a number of criteria contained in the MOU. These plans are designed to assist suppliers in evaluating current water management and in developing plans for increasing efficiency. At the present time, 31 signatory irrigation districts represent nearly 3 million acres of irrigated farmland. The plans developed must be

Each water supplier who has signed the MOU is committed to developing a water management plan based on a number of criteria contained in the MOU.

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New Publications



Water Facts #2—7 Steps for Managing Groundwater Supplies

DWR's Division of Planning and Local Assistance recently updated and reprinted *Water Facts #2—7 Steps for Managing Groundwater Supplies*. This 2-page, step-by-step fact sheet will be helpful to local groundwater managers, individuals, residents, and public water supply system operators by providing them with the information necessary to make informed groundwater management decisions. To obtain a copy of this or other *Water Facts*, contact Bulletins and Reports, Department of Water Resources, 1416 Ninth Street, Room 338, Sacramento, California 95814; telephone (916) 653-1097.

Water Facts #21—The California Irrigation Management Information System

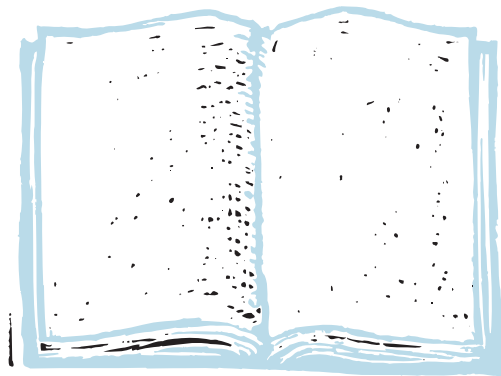
DWR's Division of Planning and Local Assistance recently printed *Water Facts #21—The California Irrigation Management Information System*. As the largest automated agricultural weather station network in the nation, CIMIS has become integral to thousands of water users. This 4-page publication will be helpful to current CIMIS users and to potential users in that it briefly explains the basics of CIMIS and offers the reader a comprehensive list of CIMIS-related publications and contacts. To obtain a copy of this or other *Water Facts*, contact Bulletins and Reports, Department of Water Resources, 1416 Ninth Street, Room 338, Sacramento, California 95814; telephone (916) 653-1097.

A Briefing on California Water Issues (Virtual Publication)

The Water Education Foundation's popular publication—*A Briefing on California Water Issues* is now available via cyberspace at www.water-ed.org. Designed to provide a quick overview of the State's water picture, the briefing issue contains current information on topics such as the Bay-Delta, groundwater, agricultural drainage, the Colorado River, water marketing, and environmental issues. Its placement on the Web was funded by a grant from the U.S. Bureau of Reclamation. It will no longer be offered in printed format and will be updated periodically.

A Consumer's Guide to Water Conservation: The Inside Story ***A Consumer's Guide to Water Conservation: The Outside Story***

These two new publications of the American Water Works Association are packed with consumer tips on the best ways to reduce water consumption. Colorful cartoons enhance the presentation of the information quickly captivating and engaging readers of every age. *The Inside Story* deals with reducing water wastes inside the home with conservation and plumbing tips, while *the Outside Story* presents ways for reducing outside water waste through effective watering and Xeriscaping. Prices vary according to number ordered. To obtain a copy of either of these publications, contact the AWWA at (800) 926-7337.



Water Conservation

NEWS

Demonstration Project for On-Farm Management in Imperial Valley on the Move

The Department of Water Resources, U.S. Bureau of Reclamation, and Imperial Irrigation District are funding the University of California to continue a three-year demonstration project which began in 1995 to determine the best management practices for reducing surface irrigation in heavy clay soils and to determine crop coefficients for alfalfa and sudangrass. These two crops are grown on about 50 percent of Imperial Valley irrigated land. On May 21, DWR staff attended the fifth project advisory committee meeting. Data for the two years show new techniques in water management could reduce drainage water without significantly affecting crop yield. Twenty-five individuals representing the cooperating agencies, Imperial County, growers, and consultants attended the meeting. The cooperative agencies and growers are looking into expanding the project to a second phase by demonstrating the developed technologies on three to five commercial alfalfa fields served by IID. For more information, contact Fawzi Karajeh at (916) 327-1828; e-mail fkarajeh@water.ca.gov

Landmark Conservation/Transfer Agreement Approved

San Diego County Water Authority and Imperial Irrigation District have signed a water conservation and transfer agreement believed to be the largest water transfer in United States's history. It allows San Diego County to receive up to 200,000 acre-feet of water that IID conserves each year. IID would transfer conserved agricultural water to SDCWA for at least 45 years; either party could extend the contract by 30 years. Transfers of 20,000 acre-feet during the first year would increase annually in 20,000 acre-feet increments until they reached a minimum of 130,000 acre-feet or a maximum of 200,000 acre-feet. After ten years, IID could transfer an

additional 100,000 acre-feet per year if that much more could be conserved. For more information, contact Patricia A. Brock, Imperial Irrigation District, at (760) 339-9417.

Belridge WSD Seeks Prop. 204 Water Conservation Loan

Belridge Water Storage District has submitted an application for a \$2,963,000 water conservation loan to finance lining of its Zone 5 Canal in Kern County (about 35 miles northwest of Bakersfield). This is the first application made under Proposition 204, the Safe, Clean, Reliable Water Supply Act which makes low interest loans of up to \$100,000 for a feasibility study and up to \$5 million for a construction project from a total fund of \$30 million. If you have a potential project and would like to apply for a loan, contact Dave Rolph (water conservation, local projects) at (916) 445-8259, e-mail drolph@water.ca.gov.

CONSERV 99— The Water Conservation Conference

Planning is already underway for CONSERV 99, scheduled for January 31-February 3, 1999, at the Hyatt Regency in Monterey, California. Held every three years, this premiere conference will be the fourth such event sponsored by the American Water Works Association. This year's theme is "*Water Efficiency: Making Cents in the Next Century.*" Although the official announcement and registration will not be available until October, papers have already been submitted addressing the full spectrum of water conservation issues. This almost certainly guarantees that any topic of interest to attendees will be seriously discussed at length. For more information, contact Susan Miller at (303) 347-6181.

BRIEFS

On the Road with 150 Years of Water History

As part of California's Sesquicentennial celebration, the Department of Water Resources has developed traveling exhibits showing highlights of California water development. Entitled "*150 Years of Water History*," the exhibits present a photo montage of historical and current water information. Each 10' by 10' exhibit tells the story of California's water development from native American and Spanish Mission days to today's sophisticated water systems. A matching brochure provides a chronological summary of highlights in the State's water history, including development of the State Water Project, the nation's largest state-run water and power system. For more information, contact Dorothy Benjamin at (916) 653-3350; e-mail benjamin@water.ca.gov.

MWD Offers Cash Back for Variety of Retrofits

Metropolitan Water District of Southern California now offers a number of fixed dollar incentives for a number of specific business, industrial, and institutional customers: \$60 per ultra-low-flush toilet or urinal retrofit; \$15 per pre-rinse, selfclosing spray head retrofit; \$500 per cooling tower installed; \$100 per coin-operated horizontal-axis clothes washing machine installed. In addition, MWD also provides marketing assistance: identifying the "market" for device retrofits and installations, designing a marketing focus, or implementing ongoing programs. For more information, contact Bill McDonnell at (213) 217-7693; e-mail bmcdonnell@mwd.dst.ca.us.

CSU Fresno Website: Guideline to Custom Irrigation

The Center for Irrigation Technology at California State University, Fresno has opened an interactive website that serves as a guide to customized irrigation scheduling. Using daily evapotranspiration data from the California Irrigation

Management Information System, along with information provided by the user, the "Waterright" program can produce a daily or weekly irrigation schedule for ornamental or agricultural crops. The program works with virtually all types of systems, including surface sprinklers and drip/micro systems. It is also meant for use in irrigating yards, golf courses, parks, and full-scale farms. The program is on the World Wide Web at <http://www.waterright.org>. For more information, contact CIT at (209) 278-2066.

Nursing Facilities Prove Ideal for Retrofitting

Skilled Nursing Facilities (SNF) generally are older buildings with few up-to-date plumbing fixtures. Retrofitting such facilities, therefore, provides both unique problems for retrofitters and opportunities to conserve a relatively high percentage of water applied. With additional funding from the U.S. Bureau of Reclamation, the Upper San Gabriel Valley MWD has retrofitted 15 SNF in its service area in a two-phase program. Phase I involved identifying toilets and other fixtures to be retrofitted in Phase II. Approximately 660 toilets were installed in Phase II, replacing many "antique," highly inefficient fixtures. Minor additional fixtures were also provided, as needed. Total cost of the program was \$188,000.

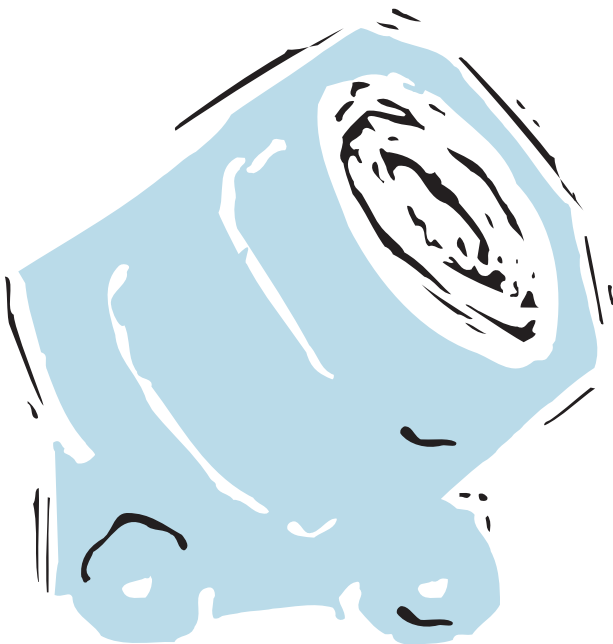
Colorado River Accounting Model and CIMIS

DWR staff attended an organizational and planning meeting to discuss procedures and contributions of various agencies to USBR in its effort to develop a model for the Lower Colorado River Accounting System (LCRAS). The model provides accounting for diversions and return flows as well as water uses by each water district or diverter. CIMIS data are being used as one of the main parameters to estimate water uses by a variety of crops grown in irrigation districts which divert

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Spotlight on San Leandro and Santa Barbara

The following items were written in response to Ed Craddock's April editorial, "How Water Efficient is Your Household?" See page 3 for Craddock's newest editorial, "How Water Efficient is Your Household? (Revisited)."



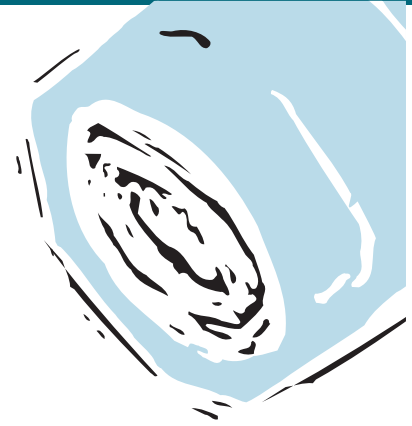
San Leandro

From Christopher P. Dundon, Water Conservation Specialist, Contra Costa Water District

"After reading your editorial in the April 1998 issue, I wanted to let you know about the water use in my yard. A few years back, I landscaped my backyard in San Leandro with about 700 square-feet of perennials and shrubs and about 360 square feet of turf. The shrub area is irrigated by a drip system and the lawn is irrigated by pop-up spray heads. The drip system was scheduled on a separate program from the lawn, allowing it to be deep-watered infrequently. When designing the shape of the lawn, I factored in the sprinkler type, which dictated the dimensions of the lawn. I used 4" pop-up heads so they would spray unobstructed over the top of the fescue lawn. These few details ensured that the distribution uniformity was as high as possible. Finally, I simply adjusted the controller on a monthly basis, when it rained, or when it was unusually hot.

"The historical reference evapotranspiration (ET_o) in San Leandro averages 42 inches per year. I calculated the water use during 1997, and found that the perennial and shrub area were watered approximately 20 inches per year (48 percent ET_o) and the lawn thrived on 33 inches per year (79 percent ET_o). The lawn was in immaculate condition and the perennials were always thriving.

"The time I spent during the year adjusting the timer and inspecting the irrigation system was very minimal. I do, however, believe that the time I spent planning an efficient landscape and irrigation system and installing one was what allowed me to use water more efficiently."



Santa Barbara

From Alison Whitney, Santa Barbara Public Works Department

"I thought you might be interested in what has happened to residential gallons per capita daily water consumption (gpcd) in Santa Barbara over the last ten years. When I say "residential water use," I am referring to both indoor and outdoor water use of all our single family and multi-family metered accounts. In 1985 the residential water use was 120 gpcd. With the onset of the drought, the City implemented an emergency demand reduction program including water conservation incentives and high water rates, and thus the residential water use dropped to 59 gpcd in 1990 and to 56 gpcd in 1991. Once the drought emergency program ended and steeply inclining water rates went down, usage

began to slowly increase: 1993=71 gpcd, 1994=74 gpcd, 1995=75 gpcd, 1996=78 gpcd, 1997=86 gpcd. Although six years have passed since the last drought, our residential usage is still 70 percent of pre-drought usage. Some of this savings can be credited to long-term savings achieved during the drought programs and some to the City implementing the CUWCC BMPs since 1992. It will be interesting to see at what amount the residential post-drought gpcd will stabilize. I'll keep you posted."

For more information, contact Whitney at (805) 564-5574; e-mail awhitney@ci.santa-barbara.ca.us.

The Agricultural Water Management Council

(continued from page 4)

completed within two years of signing the MOU. The plans of the initial signatories are due two years after the Council was convened on July 17, 1997.

CALFED's proposed solutions for improving the management of the Sacramento/San Joaquin Delta have placed new emphasis on the Council to improve water use efficiency. CALFED has proposed that the development of water conservation plans under the MOU be a prerequisite for agricultural water users who wish to obtain additional water supplies or other benefits from CALFED projects and facilities. CALFED has established a target of 5.5 to 6 million acres of irrigated farmland in the solution area to be covered by a water conservation plan endorsed by the Agricultural Water Management Council by January 1999. CALFED is providing a small amount of funding to support workshops to encourage more agricultural water suppliers to sign the MOU.

Many in the agricultural community support the efforts of the Council, and most believe that activities undertaken by signatories to the MOU should fulfill agriculture's obligations under CALFED. However, many agricultural water suppliers believe that the acreage targets and timelines set forth in CALFED's proposal are inappropriate and that other uses of water, including the environment, should also be held to efficient water use standards. Finally, federal water contractors in the Central Valley, who were mandated by the Central Valley Project Improvement Act to develop their own water conservation plans, believe that their efforts should satisfy the requirements of both the Council and CALFED. These issues will undoubtedly be an important part of this year's ongoing discussions regarding CALFED.

news briefs

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Colorado River water. Representatives from Palo Verde Irrigation District, Imperial Irrigation District, Metropolitan Water District of Southern California, and Colorado River Board of California were among 28 attendees at the meeting. USBR asked DWR for technical help with the use of CIMIS evapotranspiration data, quality control, and crop coefficients to further refine LCRAS. USBR has published a draft report regarding LCRAS and results of the model for 1995. For more information, contact Baryohay Davidoff at (916) 327-1788; e-mail baryohay@water.ca.gov.

Urban Water Management

Staff, along with several representatives from urban water agencies, attended the first in a series of Urban Water Management Planning Draft Review Criteria meetings held by DWR's Water Conservation Office. Everyone had an opportunity to make constructive comments on the draft review criteria for the 2000 urban water management plans. Many agencies voiced their concern that the review criteria be careful to follow what is in the law and nothing more. For more information, contact Greg Smith at (916) 327-1619; e-mail gregs@water.ca.gov.

Irrigation Designer/Manager Program at Cal Poly State University

The Irrigation Training and Research Center at Cal Poly State University, San Luis Obispo is offering several comprehensive irrigation design and management classes the weeks of July 20-24 and July 27-31. Courses include basic soil, plant and water relationships, basic pumps, drip and microirrigation, irrigation scheduling, and salinity and drainage. For more information, contact ITRC at (805) 756-2434.

Storage Reservoir Dedicated to Louise Willey

In recognition of Louise Willey's contribution to the local agricultural community, the Imperial Irrigation District Board of Directors have officially named the Trifolium Lateral Interceptor Project the Willey Water Storage Reservoir. Mrs. Willey, owner and operator of a 2,500-acre farm since 1946, pioneered the underground agricultural tile cleaning industry and was a member of the California Board of Food and Agriculture. The Trifolium Lateral Interceptor Project conserves about 10,700 acre-feet of operational discharge from 15 lateral canals serving 30,000 acres of farmland.

First Biannual CIMIS Meeting

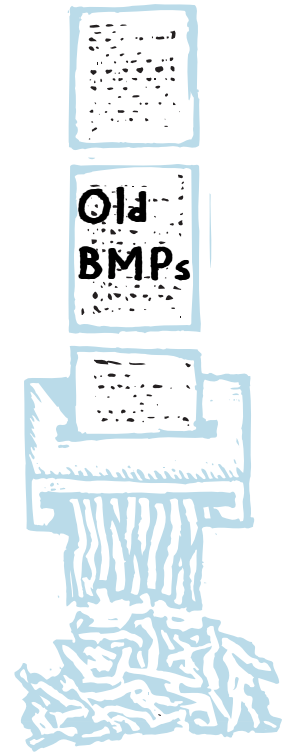
DWR staff hosted the First Biannual CIMIS meeting in Sacramento. Present were DWR, university, federal, and local water agency personnel. DWR staff gave presentations on the history of CIMIS, the current status of the CIMIS program, CIMIS station siting criteria, and reference evapotranspiration calculations. Following the presentations were discussions about the necessity of standard station siting criteria, the effect varying site environment has on Eto, and development of the Eto equation. Another meeting is scheduled for October 1998. For more information, contact Baryohay Davidoff at (916) 327-1788; e-mail baryohay@water.ca.gov



49 WAYS TO SAVE WATER

The American Water And Energy Savers, Inc. recently published a comprehensive fact sheet describing simple ways one can save water both indoors and outdoors. These 49 water-saving techniques can be accessed through the Internet at:

<http://www.americanwater.com/49ways.htm>



California Urban Water Conservation Council Taps New Ideas

Urban water management in California is complex and dynamic. Tapping into new modifications for the next century, the California Urban Water Conservation Council needed clarity and better defined objectives for Best Management Practices. To move forward, the 200-plus members knew that the BMPs required revision.

The revisions included revising urban water conservation practices that reduce long-term demand for water. While these practices had been achieved by collaborative research and development among the Council's membership by monitoring and evaluating urban water conservation programs, there was need to quantify and gather uniform data.

The Council's Strategic Plan, published in 1996, recommended amending these BMPs and sharpening the Council's focus. First the Council more clearly defined reporting requirements to the members. Secondly, the old BMPs were improved upon by combining existing BMPs and adding two new components. For example, a horizontal axis washer BMP and wholesaler BMP have been added as standard practices. The revised BMPs, approved by the Council in September 1997, now total 14 instead of 16.

Prior to the new and improved BMPs, the measurements used to determine urban water agencies' effectiveness in implementing BMPs was inconsistent. The Council hopes that the revisions will provide a more accurate numerical measurement of BMPs that will provide reliable data to assess BMP implementation. A ten-year implementation target was established for each BMP based on two-year increments.

The new system is easier for agencies to report their findings to the Council because the questions are narrowed and standardized. The revisions should help water agencies, because they will have a clear understanding of what they need to be reporting biannually. The Council's ability of reporting to the State Water Resources Control Board should also be more uniform, descriptive, and easy to show. The first reports based on the revised BMPs will be completed by June 30, 2000.

Water customers benefit because they see what water agencies are doing for them, they understand how they are saving money, and they familiarize themselves with trends in their own per capita water use.

Rice Growers Use Lasers, Manage Soils to Cut Water 38 percent

(continued from page 1)

aquatic weeds but promotes vigorous rice growth.

Rice is grown on heavy clay soils where percolation is extremely slow and water puddles readily. Sandy to loamy soils, where moisture percolates rapidly, were phased out of rice production years ago as a matter of economic necessity because of rising water costs.

Many growers have also installed recirculation systems on their farms. And several large irrigation companies have installed system-

wide recirculation systems that collect and redistribute water among growers. Many of these systems were privately financed through low-interest loans and government-sponsored grants. Dozens of on-farm systems were partially financed through a fund created by a partnership between the California Rice Industry Association and Zeneca Agricultural Products Company.

Roberts believes that rice growers will continue to seek new and better means to conserve water. Plant breeders have already made advancements by producing rice varieties that use less applied water. Irrigation researchers are also investigating new ways to automate and improve water delivery systems while growers perfect their skills at managing rice water for maximum efficiency.

For example, Glenn-Colusa Irrigation District, a large supplier of water to rice fields and federal waterfowl

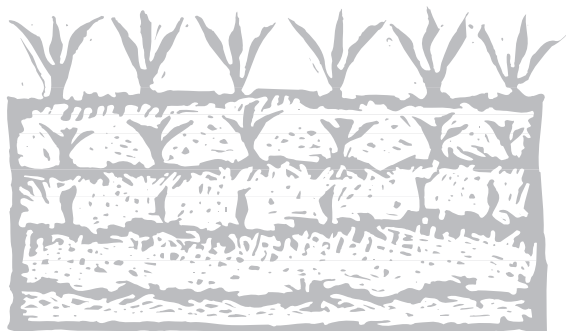
refuges, is implementing a program to remotely monitor gates and weirs using automated sensors and controls that are connected to a centralized computer located up to 75 miles from the Sacramento River point of diversion. "The project has already given GCID employees a new consciousness toward improved water management," said District Manager Van Tenney.

"Rice in California provides habitat for 30 special status species of birds, reptiles, mammals, and amphibians," said Roberts. "Millions of waterfowl and wading birds of the Pacific Flyway visit rice fields while on their annual migration. The water is put to use wisely and provides many more benefits than simply producing a crop."

For more information, contact Bob Herkert, California Rice Industry Association at (530) 458-5306.



"Rice in California provides habitat for 30 special status species of birds, reptiles, mammals, and amphibians."



Summary of Major California Water Legislation



AB 254 (Machado) Safe Drinking Water, Clean Water, and Flood Protection Act

Would place the Safe Drinking Water, Clean Water, and Flood Prevention Act Bond before the voters in 1998. This bond measure would provide funds to public agencies for the design and construction of eligible recycling projects. (See SB 312.)

AB 609 (Margett) Recycled Water

Would allow agreements between groundwater replenishment agencies and recycled water wholesalers for the use of recycled water for groundwater replenishment.

AB 2027 (Machado) Water Transfers

Would require parties requesting a water transfer for more than one year to provide a report to SWRCB on the third party impacts; would require evidence that the transfer is in compliance with CEQA; would require SWRCB to hold a public hearing on such reports.

AB 2628 (Pringle) California Water Plan

Would make a statement regarding the legislative intent to amend a specified section of the Water Code to require DWR to include in its publication *The California Water Plan* a discussion and evaluation of various strategies for supplying California's water needs.

AB 2666 (Perata) Water Recycling

Would appropriate \$1,000,000 from the General Fund to the State Water Resources Control Board to award grants for water recycling studies. This bill would become effective only if AB 254 is on the ballot and not approved by the voters in November 1998.

SB 312 (Costa) Safe Drinking Water, Clean Water, and Flood Protection Act

Would also place the Safe Drinking Water, Clean Water, and Flood Prevention Act bond before the voters in 1998 (see AB 254). This measure would provide funds to public agencies to aid in the design and construction of eligible recycling projects.

SB 1011 (Costa) Water Transfers

Would limit the protection of water rights for water not used because of fallowing to such water not used because of temporary fallowing.

SB 1854 (Costa) DWR Loans and Grants

Would authorize loans from various bond funds administered by DWR for water conservation and groundwater recharge; would authorize grants for safe drinking water projects.

WATER CONSERVATION- RELATED EVENTS

August 3-7, 1998

1998 International Conference on Water Resources Engineering

The Peabody Hotel
Memphis, Tennessee

For further information, call (800) 548-2743.

—This five-day conference will include a Groundwater Management Symposium, Hydrology and Hydraulics of Wetlands Mini-Symposium, and Bank Stabilization Mini-Symposium. The conference is cosponsored by Water Resources Engineering Division; American Society of Civil Engineers; and Ground Water Institute, University of Memphis.

August 26-27, 1998

Water Conservation Information Committee Meeting

San Diego, California

For further information, call Meena Westford at (619) 898-5754.

—This 4th meeting of the WCIC is sponsored by the Lower Colorado Region of USBR.

September 23-25, 1998

Eastern Sierra Watershed Tour

Sponsored by the Water Education Foundation

For further information, call (916) 444-6274.

—Explore some of the watersheds that supply water to California and Nevada. Tour the Truckee-Tahoe Basin (past the Walker River, to the Mono Lake Basin, through the Owens Valley, and into Southern California) to see the significance of managing water resources through a watershed. Discussion will also examine the agricultural, domestic, recreational, and environmental uses of the water supply and reasons for using an integrated watershed management approach.

October 7-9, 1998

Northern California Water Facilities & Fisheries Tour

Sponsored by the Water Education Foundation

For further information, call (916) 444-6274.

—The tour focuses on the Sacramento River and includes visits to Oroville Dam (the beginning of the State Water Project), and Shasta Dam (keystone of the federal Central Valley Project). Other highlights are tours of the Feather River Fish Hatchery, Gray Lodge Wildlife Refuge, Spring Creek Debris Dam, an outdoor salmon barbecue, and a houseboat cruise on Shasta Reservoir.

October 28-31, 1998

Conference on Shared Rivers: "River Basin Management to Meet Competing Needs"

Sponsored by the United States Committee on Irrigation and Drainage

Park City, Utah

For further information, call (303) 628-5431.

—This four-day conference will feature in-depth examinations of four major western U.S. river basins: the Colorado, the Columbia/Snake, the Platte/Missouri, and the Rio Grande. A fifth session will provide a broader view of other river basins in the U.S. and internationally. Each of the discussions will begin with an expert speaker who will examine the river basin's administrative, political, social, or technical management issues.

November 1 - 3, 1998

The Irrigation Association's 19th Annual International Irrigation Show

San Diego Convention Center

San Diego, California

Sponsored by the Irrigation Association

For further information, call (703) 573-3551.

—Each year the Irrigation Association hosts the world's largest exposition and technical conference dedicated to irrigation. Exhibitors range from all major suppliers to the start-up companies with innovative new ideas and products. The show attracts between 5,000 to 6,000 attendees from 53 countries.

December 13-16, 1998

50th National Ground Water Association's National Convention and Exposition

Las Vegas, Nevada

For further information, call (800) 551-7379.

—The National Ground Water Association's 50th Anniversary celebration will culminate with its National Convention and Exposition. Workshop subjects will include business management, safety and compliance issues, leadership, groundwater geothermal heat pumps, and technology topics. In addition to the workshops and various exhibits, legendary Notre Dame football coach and CBS College Football Analyst Lou Holtz will share his motivational insight with the groundwater industry as keynote speaker of the event.

January 5, 1999

Landscape and Nursery Expo 1999

Sacramento Community Convention Center
For more information, call (916) 442-4470.

—Sacramento Valley's premiere landscape and nursery trade show with educational seminars specifically geared for arborists, landscape professionals, turf managers, and nursery professionals.

January 31-February 3, 1999

Conserv '99 Conference: "Water Efficiency: Making Cents in the Next Century"

Hosted by the American Water Works Association
Hyatt Regency Monterey
Monterey, California

For further information, call (303) 347-6181.

—Announcement and registration packet for this premier water conservation conference will be available in October: contact the number above to be included on the mailing list.

DESIGN A WATER CONSERVATION STAMP

IMAGE

The American Water Works Association, Water Conservation Division, is hosting its "Design a Water Conservation Stamp" Contest. The contest is designed to help promote the importance of water and using it wisely. The winning drawing will be used as promotional artwork and may even be placed on a United States postal stamp.

SPECIFICATIONS AND JUDGING

All entries must be original artwork and submitted on an 8 1/2" x 11" sheet of paper. The use of colored pencils, markers, watercolors, crayons, inks, and any other medium are acceptable. Include name, age, address, phone number, and e-mail on back of entry. Limit of one entry per person. The contest coordinators will forward the top 100 entries to a judging panel composed of industry experts.

ENTRY DEADLINE

All entries must be postmarked no later than October 30, 1998 (no late entries accepted). Please submit entries to:



AWWA Water Conservation Stamp Contest

City of Fresno/Water Conservation Program
1910 E. University
Fresno, CA 93703-2988

All entries are exclusive property of the AWWA Water Conservation Division. All reproducing and promotional rights will be given to AWWA Water Conservation Division.

THE WINNER

The winning entries will be announced and displayed at next year's Conserv 99 in Monterey, California. For further information, e-mail davet@fresno.gov, or cs@getwise.org.

WATER CONSERVATION NEWS

P.O. Box 942836

Sacramento, CA 94236-0001

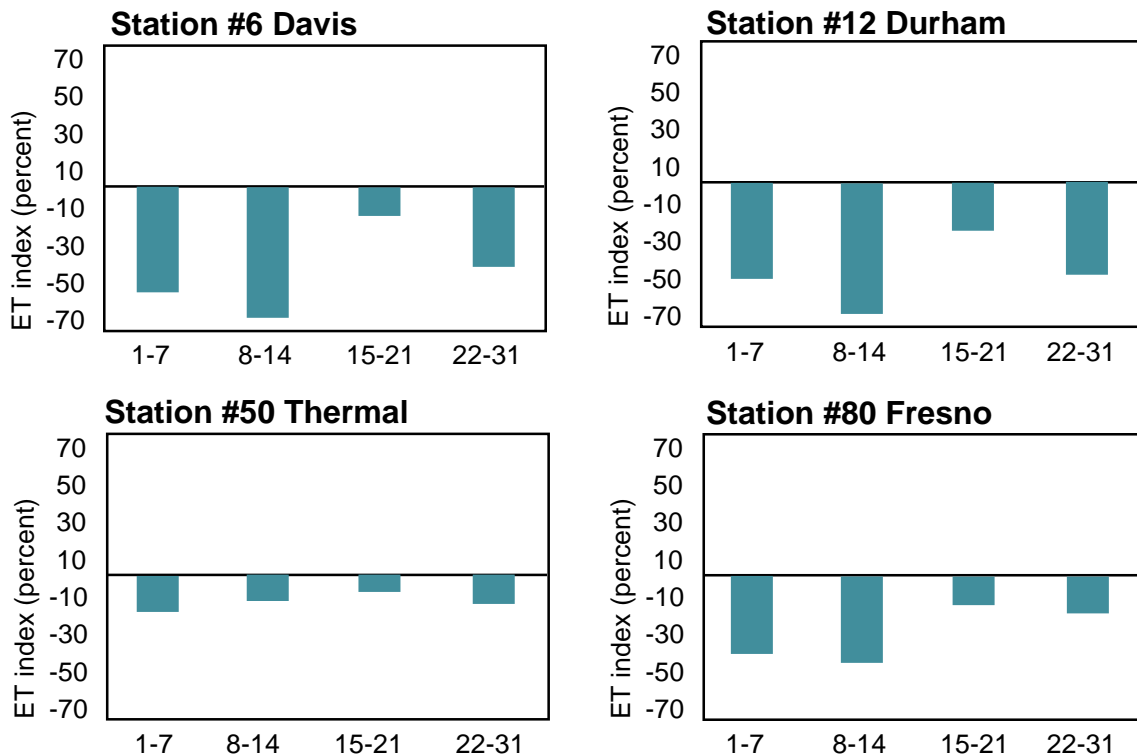


Address Correction Requested

CIMIS

Network News

7-Day CIMIS Index for May 1998



CIMIS has developed an ET index to assist in adjusting lawn watering. The index is based on long-term reference evapotranspiration (ET_o) data from CIMIS weather stations. ET_o is an estimate of water use of grass that is an indication of water use by all kinds of vegetation. The charts above show examples of ET indices for four CIMIS stations for May 1998. All four stations show negative indices, meaning lawn water requirements for all four locations were lower than normal—a reflection of the unusual weather we experienced this May.

Visit the CIMIS web site at <http://wwwdpla.water.ca.gov/cgi-bin/cimis/main.pl>.